High-Speed Photography

PROBLEMS OF MOTION ARE EASILY ANALYZED WITH HIGH-SPEED CAMERAS

Above, a Hycam sequence. Framing rates range from 5 to 44,000 pictures per second.

Stretching time

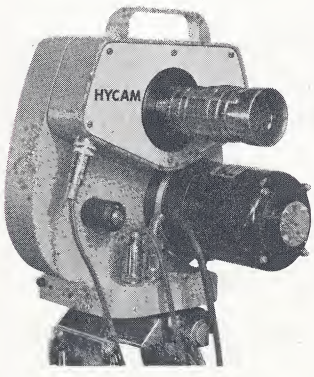
In the study of rapid motion, photo-optical means have long been used to stretch the time base. This technique has made it possible to slow down action so it can be studied in detail.

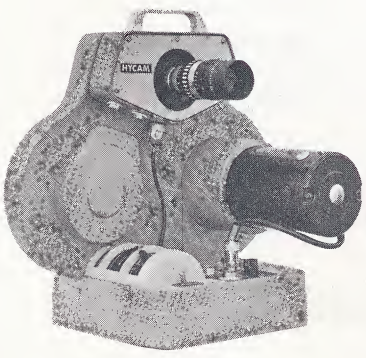
An early trick in the motion-picture field was the slow-motion sequence, produced by speeding the camera up so that projection at normal speeds permitted newsreel viewers to appreciate the fine points of sporting events like diving, football, golf, etc.

In 1932, this speed range was substantially extended by the introduction of the rotating-prism type camera. In this development, the film moves through the camera continuously and the image is transferred to the film by the action of a rotary optical element.

The Hycam contribution

Within the last two years, the world's most advanced rotating-prism type camera has appeared on the engineering scene and radically expanded the area of usefulness assigned to it. Going back to fundamentals, the engineers of Red Lake Laboratories Inc. used their career-long experience in high-speed photo instrumentation to refine and develop the essentially simple Hycam. In its present advanced form, Hycam exhibits the following three outstanding characteristics:





100-ft-film-capacity Hycam—weight 13 lb 400-ft-film-capacity Hycam—weight 30 lb

- **Best picture quality** by far ever produced with a rotating-prism camera (resolution—68 lines per millimeter vertically and horizontally)
- **The greatest range of speeds** ever available in the rotating-prism camera field (5 to 44,000 pictures per second)
- **The lowest first cost,** model for model, and the most economical operation, service, and maintenance.

more ➤

HIGH-SPEED PHOTOGRAPHY (continued)

Simplicity, ease of use, and versatility permit Hycam to be used in the laboratory by scientists, engineers, or photographers. Hycam is so designed that the following features can be added for special problems:

CINE-OSCILLOGRAPHY

In the study of mechanical equipment having electrical functions, it is often desirable to coordinate the two aspects in analysis. Replacement of the Hycam focusing eyepiece with an accessory lens permits superimpositioning of oscilloscope traces over the framing images on the film.

STREAK PHOTOGRAPHY

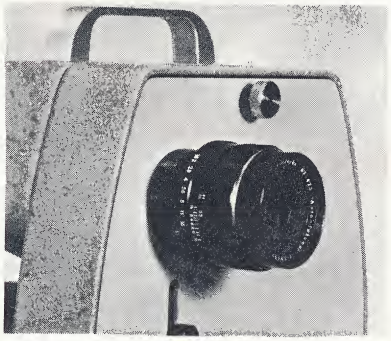
By replacement of the Hycam lower film gate, an auxiliary attachment gives a slit at the film plane, adjustable from 0 to 3/16 of an inch. This permits streak photography at writing rates up to 0.08 millimeters per microsecond.

TIME-LAPSE PHOTOGRAPHY

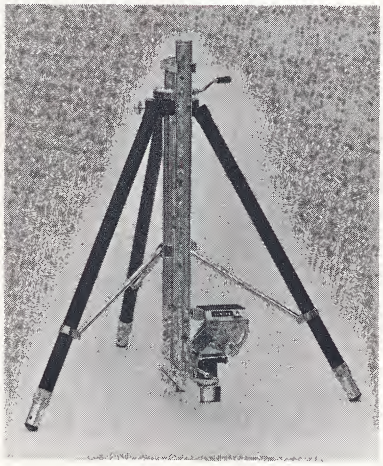
Addition of a simple auxiliary device to Hycam permits successive exposures, individually initiated by electrical input signals at rates as low as desired. Used to speed up the action of imperceptible events.

SELF-PROJECTION

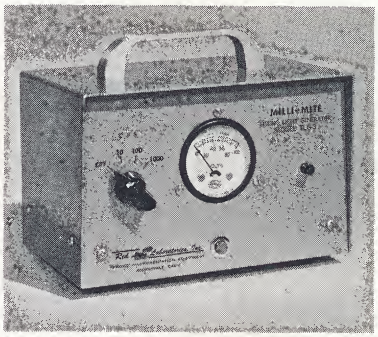
Auxiliary projection-lamp assembly converts Hycam into a projector capable of displaying any of the types of films taken by Hycam.



Oscillo Attachment
This shows the manner in which a Pentax-type lens is adapted to the camera door for cine-oscillography as described above. Weight 1 lb.



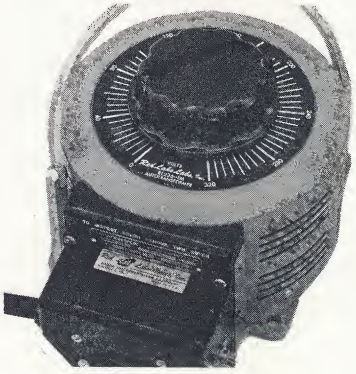
Tripods
Special tripods are available for low and high mounting of both Hycam cameras in the field. Weights 13 and 27 lb.



Timing Light Generator
Solid-state unit delivers timing pulses to neon lamp built into Hycam for putting time-base pips on the film. Operates from battery or 115-v a-c power. Weight 4½ lb.

Exposure Meter
Red Lake recommends the Honeywell Pentax 1°/21° Exposure Meter, which has an angle of acceptance of only one degree and gives camera settings directly from light-level readings. Weight 18 ounces.

ISA SHOW '65
VISIT BOOTH 1024
Los Angeles Sports Arena
October 4-7, 1965



Power Supply
Variable autotransformer, 115-v a-c input, 0- to 320-v a-c output, controls both 100-ft and 400-ft Hycam models up to their top rated speeds. Weight 24 lb.

Red Lake Labs, Inc.

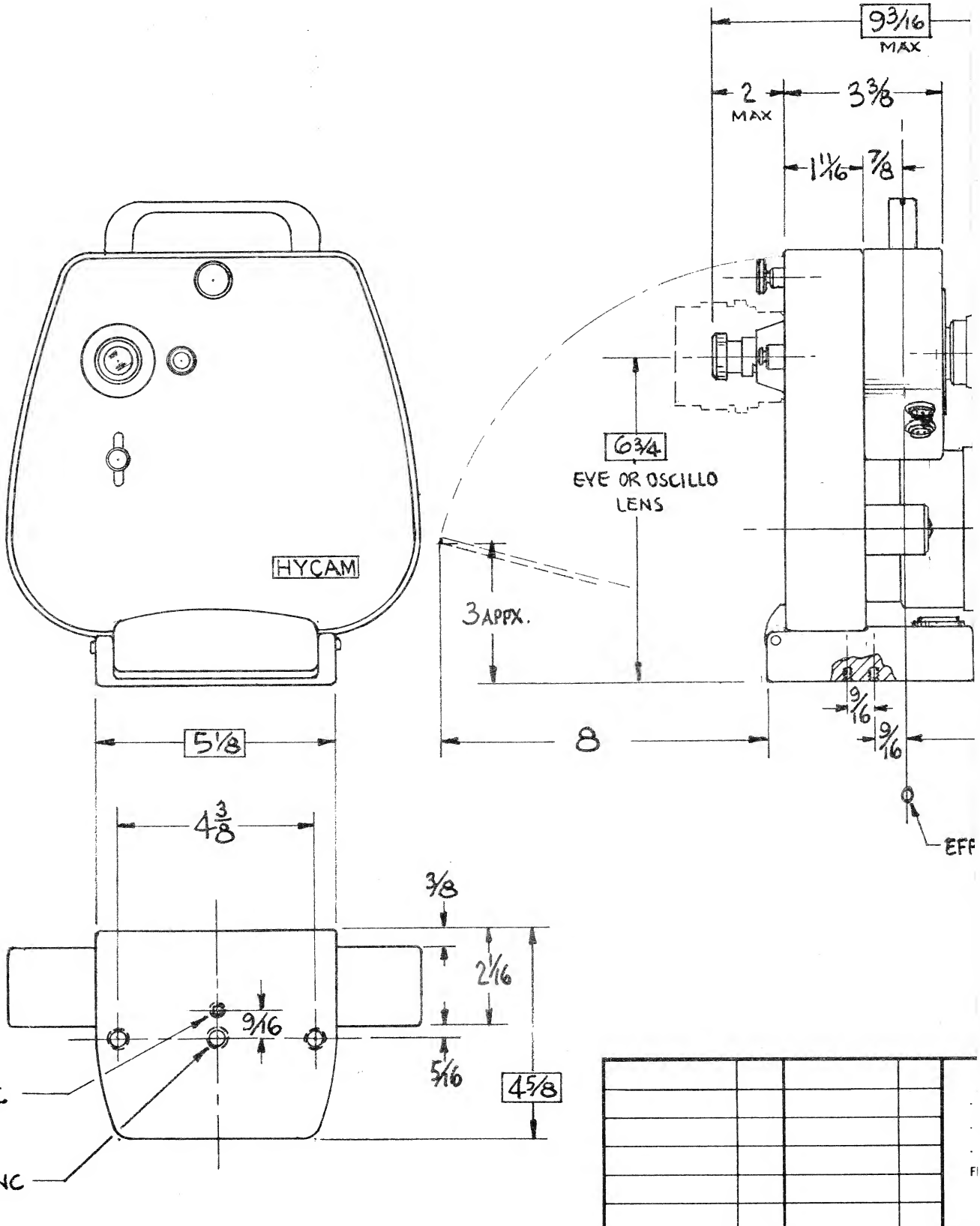
PHOTO INSTRUMENTATION EQUIPMENT

Products the User Likes

2971 CORVIN DRIVE
KIFER INDUSTRIAL PARK
SANTA CLARA, CALIFORNIA 95051
(408) 739-1698

FORM HSP-565

PRINTED IN U.S.A.



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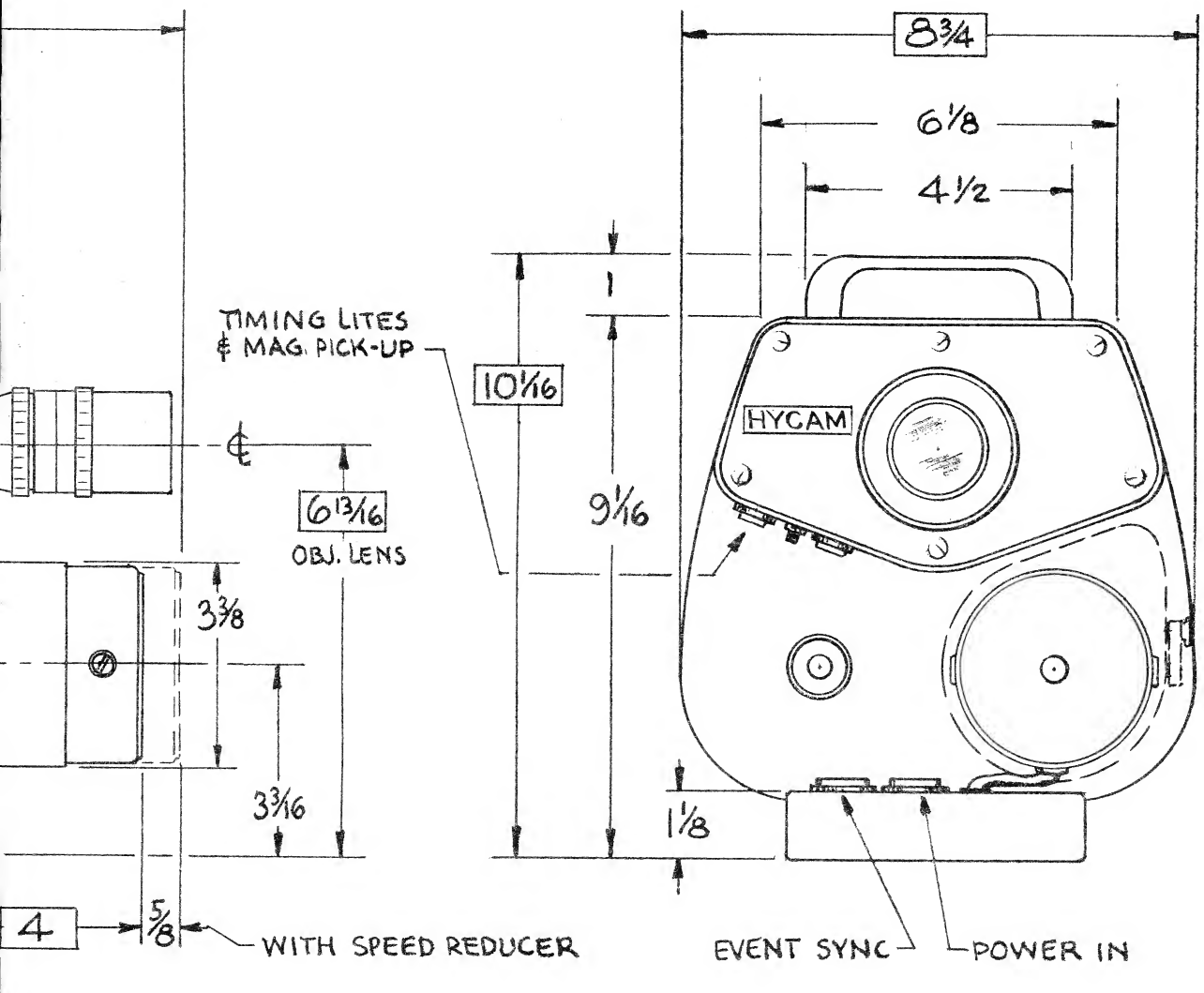

ECTIVE FILM PLANE

WEIGHT APPROX. 13 LBS

ST'D CAMERA DIM'S SHOWN - SUBJECT TO CHANGE WITHOUT NOTICE

ITEM	PART NO	DESCRIPTION	QTY

INCH TOLERANCES UNLESS OTHERWISE NOTED

X	± .050	ANGULAR ±	°
XX	± .020	CONCENT.	T.I.R.
XXX	± .005	MACH. SURFACES	63
ACT.	± —	MAX. FILLET	R.

BREAK EDGES AND CORNERS .005 – .020
DO NOT SCALE THIS DRAWING

FIN: —

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Red Lake Laboratories
SANTA CLARA, CALIF.

	4-17-64	APV	
		APV	
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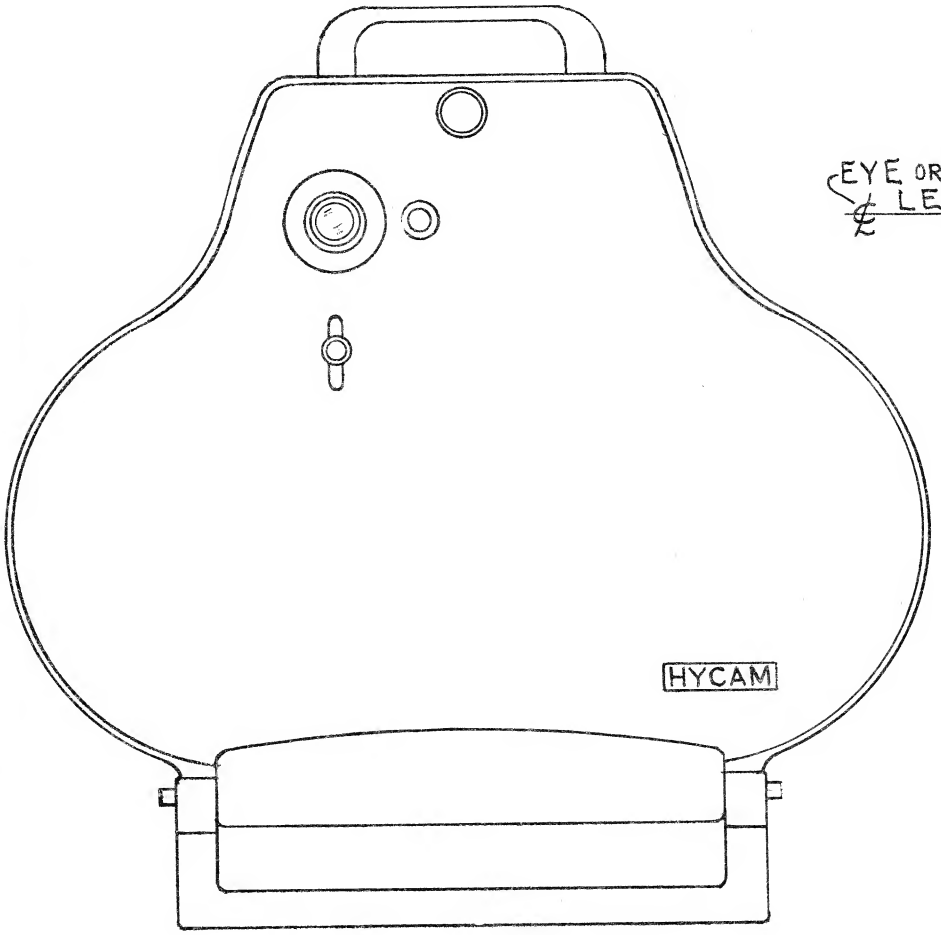
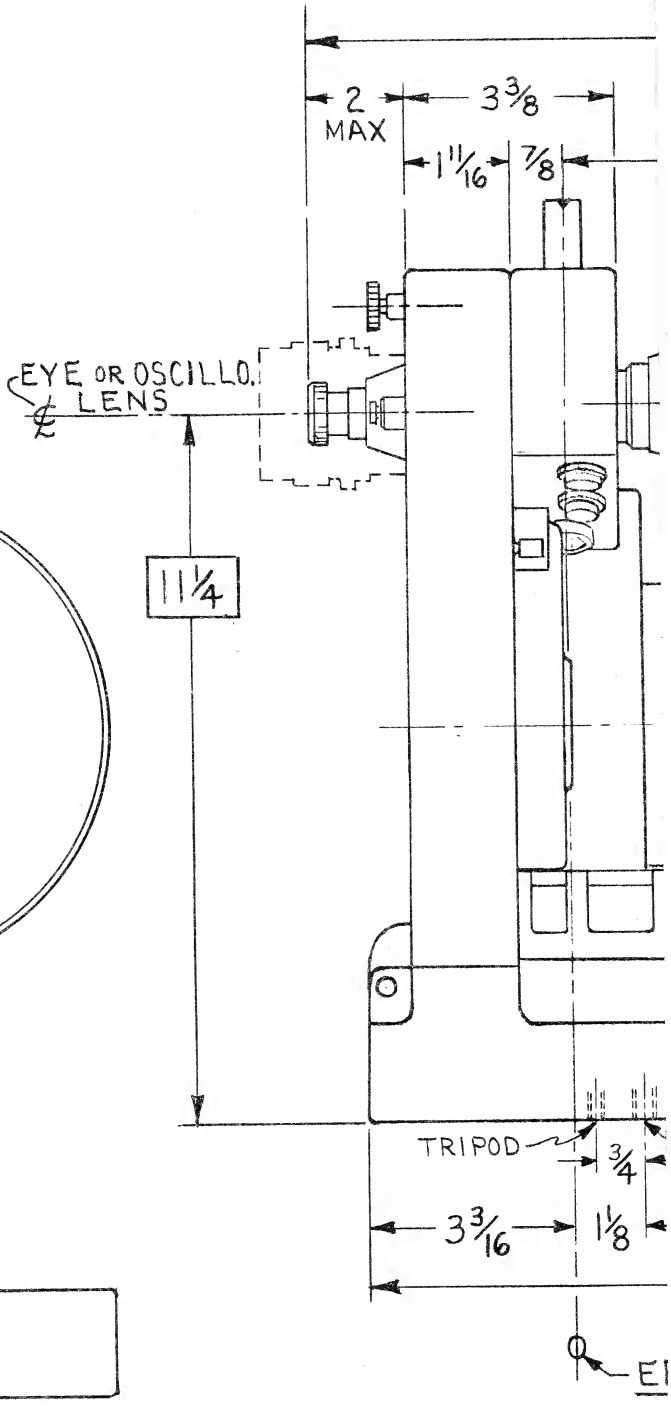
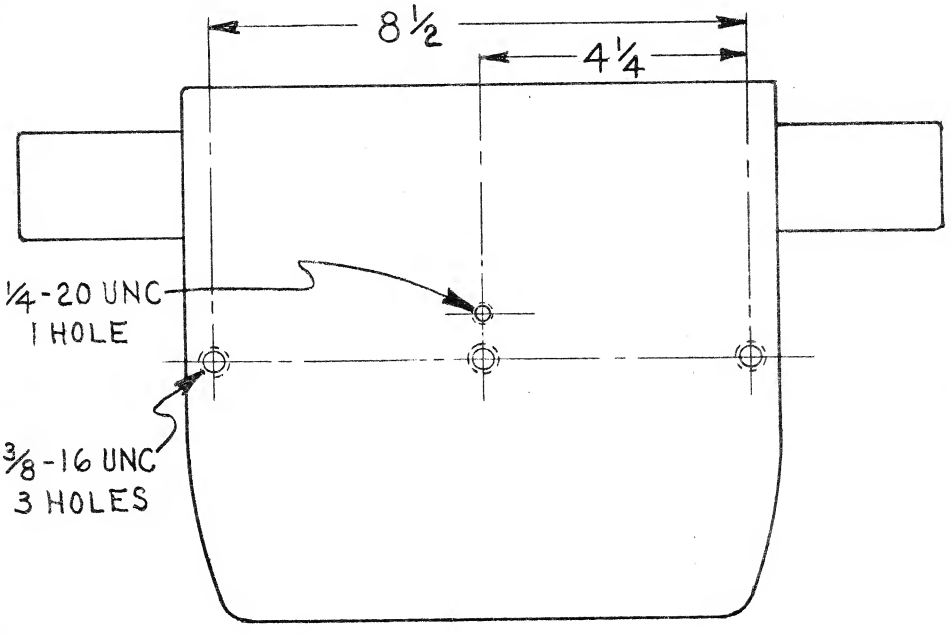
OUTLINE DWG –
MDL's K2001 & K2001A HYCAM (100')

40010 CHG A







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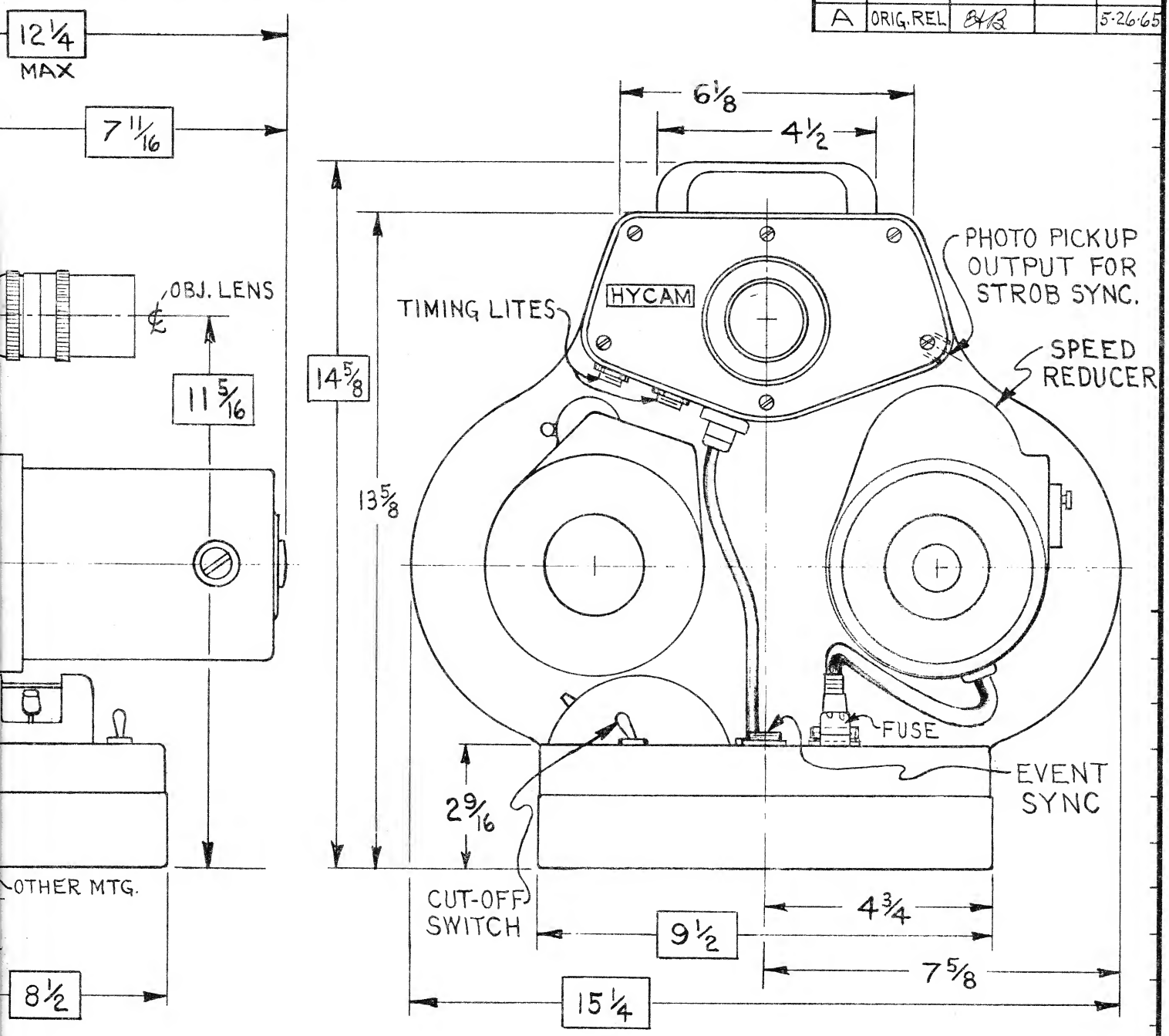

FECTIVE FILM PLANE

ITEM	PART NO.	DESCRIPTION	QTY

NCH TOLERANCES UNLESS OTHERWISE NOTED

LED HOLES
−.000
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+.006
+.008
+.010

BREAK EDGES & CORNERS .005/.010
THDS = UN CLASS 2A OR 2B
DO NOT SCALE PRINT

.X ±.020
.XX ±.010
.XXX ±.005
FRACT. ± —

ANGULAR ±
CONCENT. T.I.R.
MACH. SURF. 63 ✓
MAX. FILL. R

Ed Breda	5-26-65	ENG	
		APV	
EMW	6-1-65	APV	

WEIGHT, APPROX. 30 LBS

NOTE: STD CAMERA DIM'S SHOWN-
SUBJECT TO CHANGE WITHOUT NOTICE

OUTLINE DRAWING
MODEL K2004E HYCAM (400')

Red Lake Labs, Inc.
PHOTO INSTRUMENTATION EQUIPMENT

SCALE 1/3

FIRST USED ON MODEL K2004E

SHEET 1 OF 1

40249

CHG A